



COLORADO
Department of Transportation

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Fines Double in Steep Downhill Grade Zone Signing Guidance

2023

Acknowledgements

FHWA Manual on Uniform Traffic Control Devices (2009).

FHWA Standard Highway Signs (2004).

FHWA Standard Highway Signs Supplement (2012).

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Table of Content

Introduction	4
Guidance	4
Zone Designation	4
Identifying Zone Locations	4
Zone Signing	4
Grade Warning Signing	4
Begin Zone Signing (optional)	5
Fines Double for Speed Violation Signing	5
End Zone Signing	5
Appendix A. Signs & Plaques	A
Appendix B. Example of Steep Grade Signing	A
Example B1. Steep Downhill Grade Signing on 2-Lane Highways	A
Example B2. Steep Downhill Grade Signing on Multi-Lane Highways	A

Introduction

HB23-1267 allows CDOT to establish a steep downhill grade zone (5% or greater) where there are safety concerns related to commercial vehicles exceeding the posted speed limit. If a zone is established, CDOT is required to erect signs identifying the zone and notifying commercial vehicle drivers that double fines are assessed for speeding in the zone. More information regarding the house bill can be found through the following link:

<https://leg.colorado.gov/bills/hb23-1267>.

Guidance

The following sections provide recommendations for zone designation and sign layouts, including warning signs, begin and end zone signs, and speed limit signing with double fines plaques.

Zone Designation

Steep downhill grade zones should be designated based on the following conditions:

- A. 5% downhill grade that is more than 3,000 feet in length,
- B. 6% downhill grade that is more than 2,000 feet in length,
- C. 7% downhill grade that is more than 1,000 feet in length,
- D. 8% downhill grade that is more than 750 feet in length,
- E. 9% downhill grade or greater that is more than 500 feet in length, or
- F. Where the downhill grade is 5% or greater and the engineer determines that there is a safety concern with commercial vehicles exceeding the speed limit.

Identifying Zone Locations

Identifying a steep downhill grade zone location may be a difficult task and may require engineering judgment. The inventory of CDOT highway downhill grades may be used alongside the criteria outlined above by the Regional Traffic Engineers to identify and designate a steep grade zone.

Zone Signing

The steep downhill grade zone shall be signed with a grade warning, fines double notification, or begin zone, and end zone (see **Appendix A**). Signing should be placed on both the left and right side of the multi-lane roadway unless there are physical restrictions for placement and maintenance of the signs. Illustrated examples for steep downhill grade zone signing for 2-Lane and Multi-Lane highways can be found in **Appendix B**.

Grade Warning Signing

A grade warning shall be provided in advance of the steep downhill grade zone and should be posted periodically throughout the zone. The warning sign shall clearly indicate the

grade of the roadway. One of the following Standard Highway Sign combinations may be used to provide grade warning in the steep downhill grade zone:

1. Hill with Grade sign (W7-1a),
2. Hill with Grade sign (W7-1a) with a Next XX Miles plaque (W7-3aP),
3. Hill sign (W7-1) with a XX% Grade plaque (W7-3P), or
4. Hill sign (W7-1) with a XX% Grade, XX Miles plaque (W7-3bP).

Grade warning signing shall be consistent throughout the steep downhill grade zone.

Begin Zone Signing (optional)

If a separate begin zone signing is provided, the Begin Double Fines Zone sign (R2-10) with a Trucks Buses plaque shall be placed where the grade begins to clearly indicate the beginning of the steep downhill grade zone and shall be followed by a speed limit sign (see Fines Double for Speed Violation Signing section).

Fines Double for Speed Violation Signing

A Speed Limit sign (R2-1 or R2-20a) with a Fines Double plaque (R2-6aP or R2-6qP) shall be placed at the beginning of the designated steep downhill grade zone or roughly 500 feet following the begin zone signing, if provided (see Begin Zone Signing section), and should be posted periodically throughout the zone. There are two scenarios when signing for fines double for speed violation:

1. Single Speed Zone

In locations where there is one general speed limit for all traffic, a Fines Double plaque with the warning legend “TRUCKS BUSES” (R2-6qP) shall be placed beneath the Speed Limit sign (R2-1) to provide clear indication that the increased fines for speed violations are for commercial vehicles only as per the house bill.

2. Dual Speed Zone

In locations where the speed limit for commercial vehicles differs from the general traffic, the Speed Limit sign (R2-1) and State Law Commercial Vehicle Speed Limit sign (R2-20a) shall be posted side-by-side to provide clear indication of the speed limit for general traffic and commercial vehicles. In addition, a Fines Double plaque (R2-6aP) shall be posted under the State Law Commercial Vehicle Speed Limit sign (R2-20a) to provide clear indication that the increased fines for speed violations are for commercial vehicles only as per the house bill.

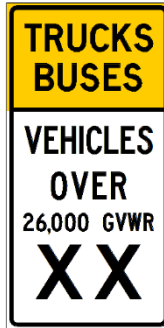
End Zone Signing

An End Double Fines Zone sign (R2-11) shall be placed at the end of the designated steep downhill grade zone.

Appendix A. Signs & Plaques



R2-1



R2-20a



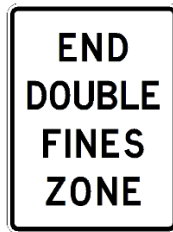
R2-6aP



R2-6qP



R2-10 w/ Truck
Buses Plaque



R2-11



W7-1



W7-1a



W7-3P



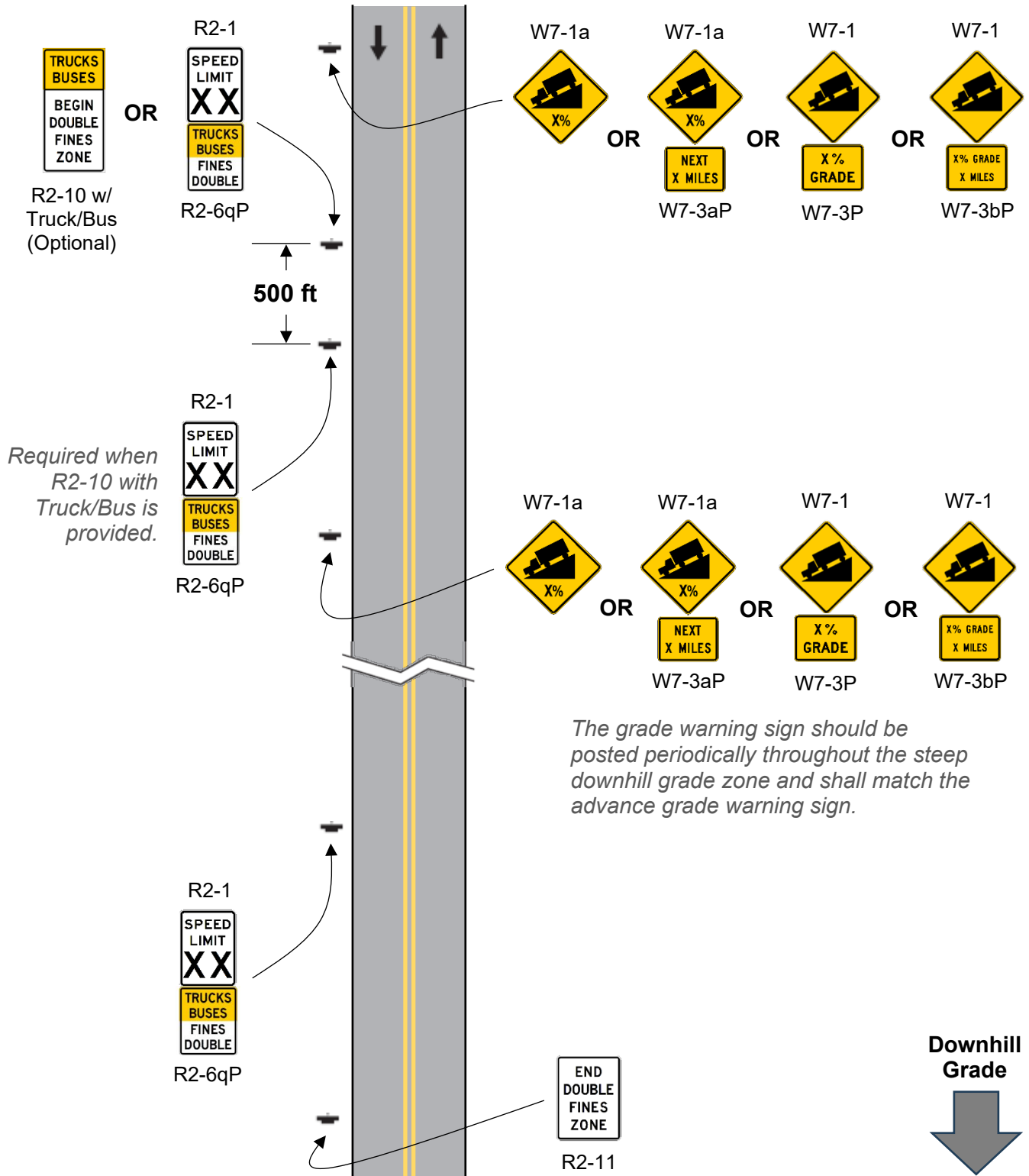
W7-3aP



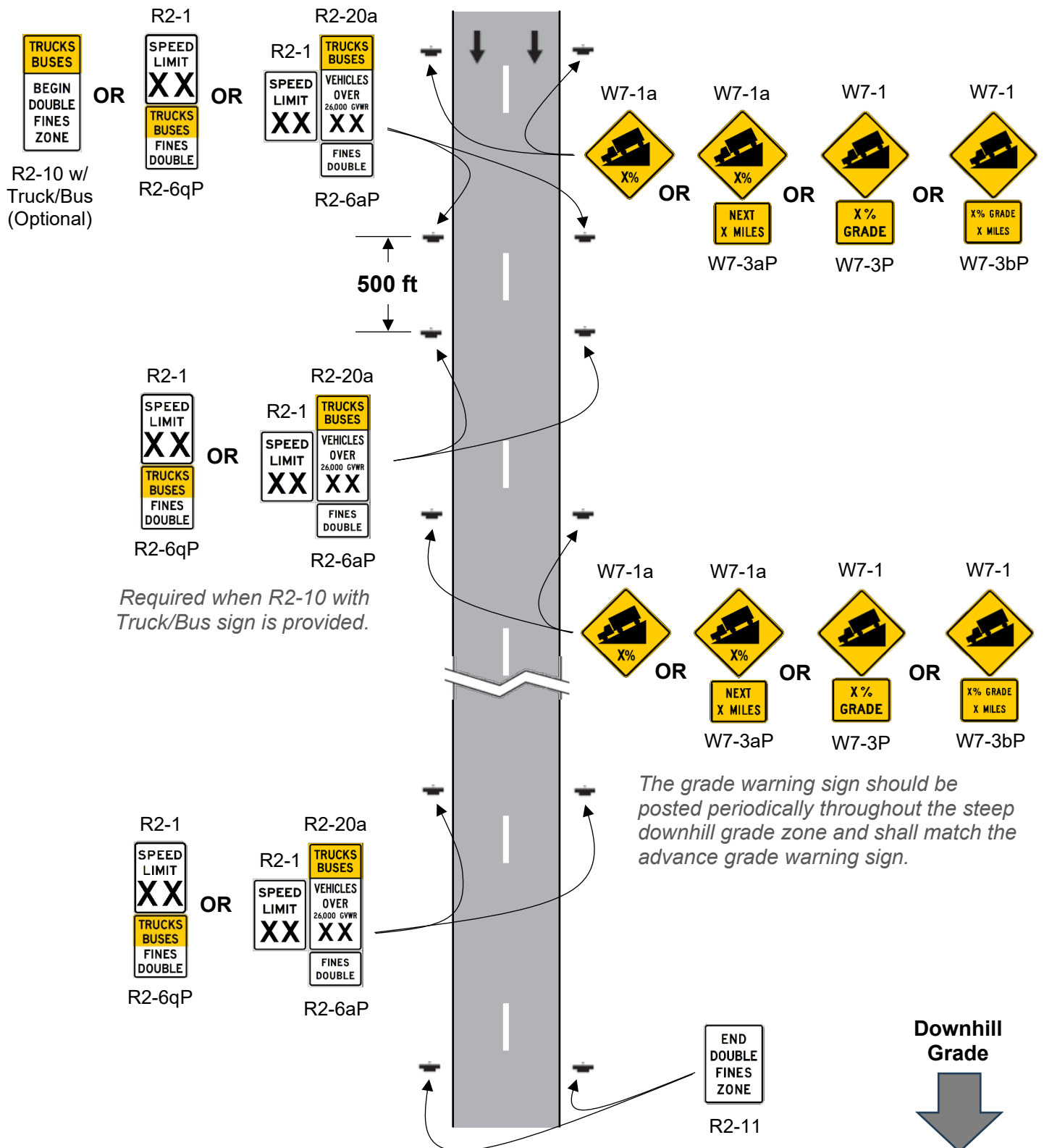
W7-3bP

Appendix B. Example of Steep Grade Signing

Example B1. Steep Downhill Grade Signing on 2-Lane Highways



Example B2. Steep Downhill Grade Signing on Multi-Lane Highways



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